

WHAT IS CLAIMED IS:

1. An isolated nucleic acid molecule comprising a sequence of nucleotides that encodes a rhesus monkey HER2/neu protein as set forth in SEQ ID NO:2 or SEQ ID NO:41.
2. The isolated nucleic acid molecule of claim 1 wherein the nucleic acid is DNA.
3. The isolated nucleic acid molecule of claim 1 wherein the sequence of nucleotides comprises the sequence of nucleotides set forth in SEQ ID NO:1, SEQ ID NO:40, SEQ ID NO:42, or SEQ ID NO:43.
4. A vector comprising the nucleic acid molecule of claim 1.
5. A host cell comprising the vector of claim 4.
6. A process for expressing a rhesus HER2/neu protein in a recombinant host cell, comprising:
 - (a) introducing a vector comprising the nucleic acid of claim 1 into a suitable host cell; and,
 - (b) culturing the host cell under conditions which allow expression of said rhesus HER2/neu protein.
7. An isolated and purified rhesus HER2/neu polypeptide comprising a sequence of amino acids as set forth in SEQ ID NO:2 or SEQ ID NO:41.
8. A method of preventing or treating cancer comprising administering to a mammal a vaccine vector comprising an isolated nucleic acid molecule, the isolated nucleic acid molecule comprising a sequence of nucleotides that encodes a rhesus monkey HER2/neu protein as set forth in SEQ ID NO:2 or SEQ ID NO:41.
9. A method according to claim 8 wherein the mammal is human.
10. A method according to claim 8 wherein the vector is an adenovirus vector or a plasmid vector.

11. A method according to claim 8 wherein the vector is a plasmid vaccine vector, which comprises a plasmid portion and an expressible cassette comprising
- (a) a polynucleotide encoding a rhesus monkey HER2/neu protein; and
 - (b) a promoter operably linked to the polynucleotide.
12. An adenovirus vaccine vector comprising an adenoviral genome with a deletion in the E1 region, and an insert in the E1 region, wherein the insert comprises an expression cassette comprising:
- (a) a polynucleotide encoding a rhesus monkey HER2/neu protein; and
 - (b) a promoter operably linked to the polynucleotide.
13. A vaccine plasmid comprising a plasmid portion and an expression cassette portion, the expression cassette portion comprising:
- (a) a polynucleotide encoding a rhesus monkey HER2/neu protein; and
 - (b) a promoter operably linked to the polynucleotide.
14. A method of protecting a mammal from cancer comprising:
- (a) introducing into the mammal a first vector comprising:
 - (i) a polynucleotide encoding a rhesus monkey HER2/neu protein;and
 - (ii) a promoter operably linked to the polynucleotide;
 - (b) allowing a predetermined amount of time to pass; and
 - (c) introducing into the mammal a second vector comprising:
 - (i) a polynucleotide encoding a rhesus monkey HER2/neu protein;and
 - (ii) a promoter operably linked to the polynucleotide.
15. A method according to claim 14 wherein the first vector is a plasmid and the second vector is an adenovirus vector.
16. A method according to claim 14 wherein the first vector is an adenovirus vector and the second vector is a plasmid.

17. A method of treating a mammal suffering from an epithelial-derived carcinoma comprising:

- (a) introducing into the mammal a first vector comprising:
 - (i) a polynucleotide encoding a rhesus monkey HER2/neu protein;

and

- (ii) a promoter operably linked to the polynucleotide;
- (b) allowing a predetermined amount of time to pass; and
- (c) introducing into the mammal a second vector comprising:
 - (i) a polynucleotide encoding a rhesus monkey HER2/neu protein;

and

- (ii) a promoter operably linked to the polynucleotide.

18. A method according to claim 17 wherein the first vector is a plasmid and the second vector is an adenovirus vector.

19. A method according to claim 17 wherein the first vector is an adenovirus vector and the second vector is a plasmid.

20. A method according to claim 17 wherein the first and second vectors are adenovirus vectors.